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09/836,711	04/17/2001	Shinya Watanabe	114G1-144	7093

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EXAMINER

EGAN, BRIAN P

ART UNIT	PAPER NUMBER
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1772

DATE MAILED: 10/28/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/836,711

Applicant(s)

WATANABE ET AL.

Examiner

Brian P. Egan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 19 and 20 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-18, drawn to a high frequency current suppression body, classified in class 428, subclass 40.1.
 - II. Claims 19-20, drawn to a high frequency current suppression method, classified in class 74, subclass 35R.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the product as claimed can be used in a materially different process of using that product. The current suppression body need not be placed next to an electronic circuit nor does the sheet need to be applied via pressure exerted on the sheet. The current suppression body could be used for any type of electrical device or any other product desiring a suppression of current. Furthermore, the body can be applied by taking the desired substrate and applying pressure on the substrate against the adhesive end of the current suppression body. Also, the body could be extruded or adhesively applied via a heating process to adhere the body and substrate together rather than a process involving the application of pressure.

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2. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

3. During a telephone conversation with Mr. Bradley Ruben on September 23, 2002 a provisional election was made without traverse to prosecute the invention of group I, claims 1-18. Affirmation of this election must be made by applicant in replying to this Office action. Claims 19-20 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Specification

5. The abstract of the disclosure is objected to because of its length. Applicant is reminded that the abstract should be no greater than 150 words. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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7. Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, for failing to particularly point out and distinctly claim the subject matter which the applicant regards as his invention.

Claim 1 recites the limitation that the adhesive layer is on at least one surface of a magnetic thin film. Claim 3 recites the limitation that a substrate is interposed between the magnetic thin film and the adhesive layer. The adhesive layer cannot be on the surface of the magnetic thin film if a layer is interposed between the two layers. Proper clarification and/or correction are required.

8. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, for failing to particularly point out and distinctly claim the subject matter which the applicant regards as his invention.

First, the phrase, "said loss faction μ " being an imaginary part in complex permeability of said magnetic loss material." It is unclear what an "imaginary part" is and if its "imaginary," how can relate to a structural limitation? Secondly, the phrase, "where the relative bandwidth bwr is obtained by extracting a frequency bandwidth between two frequencies at which the value of μ " is 50% of the maximum μ_{MAX} and normalizing the frequency bandwidth at the center frequency thereof," is indefinite. The aforementioned limitation is a process limitation and is given little to no patentable weight in an article claim. Proper clarification and/or correction are required.

9. Claim 15 is rejected under 35 U.S.C. 112, second paragraph, for failing to particularly point out and distinctly claim the subject matter which the applicant regards as his invention.

The limitation, "wherein said magnetic loss material is a thin-film magnetic body fabricated by a sputtering or vapor deposition method," is indefinite. There are no structural limitations provided. Furthermore, the limitation is in reference to a method limitation which is given little to no patentable weight in an article claim. Proper clarification and/or correction are required.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 0877394 A1.

EP '394 discloses a high current suppression composite magnetic tape (see Abstract) having a sheet shape (Fig. 4) and comprising an adhesive layer (Fig. 4, #12) on at least one surface of a magnetic thin film (Fig. 4, #11). The magnetic thin film is provided on one surface of a film or sheet form substrate composed of a synthetic resin (p.4, lines 33-36). The adhesive layer is provided on one surface of the magnetic thin film with the substrate interposed therebetween (see Fig. 4).

12. Claims 1-4 are rejected under 35 U.S.C. 102(a) as being anticipated by WO 00/19792.

WO '792 discloses a high current suppression shield having a sheet shape (Fig. 8) and comprising an adhesive layer (Fig. 8, #17) on at least one surface of a magnetic thin film. The magnetic thin film is provided on one surface of a film or sheet form substrate composed of a synthetic resin (Fig. 8, #15; see also Translation p. 2, paragraph [0016]. The adhesive layer is provided on one surface of the magnetic thin film with the substrate interposed therebetween (see Fig. 8). The magnetic thin film is provided on one surface of a film or sheet form substrate so that the magnetic thin film can be peeled away from the substrate (Fig. 8, #13).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 5-10 and 12-13 and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO '792 in view of *IEEE Transactions on Magnetics*.

WO '792 teaches a high current suppression body as detailed above. WO '792 teaches that the magnetic composition may be a ferrite (Translation p. 2, paragraph [0016]) but fails to teach the composition of the ferrite.

IEEE Transactions on Magnetics, however, teaches a thin film magnetic layer consisting on Fe-Si-N and Fe-Al-O magnetic thin films (p.4499, Col. 1). The magnetic thin film operates at frequencies in the range of several GHz (p.4499, Col. 1) and are 1 μ m in thickness (p.4499, Col. 2) wherein the film comprises granular components (p.4499, Col. 1). Although the method of forming the magnetic film is given little patentable weight and is not germane to the issue of patentability of the device itself, the magnetic thin film is formed via a sputtering technique (p.4499, Col. 2). The electrical resistivity ranges from 50 $\mu\Omega$ -cm to 10⁴-10⁵ $\mu\Omega$ -cm. Although *IEEE Transactions on Magnetics* fails to explicitly state the physical properties of the relative bandwidth, the saturation magnetization, and the anisotropic magnetic field H_k, these properties are inherently met based on the material composition of the magnetic thin film. It would have been obvious to one of ordinary skill in the art at the time applicants invention was made to have modified the magnetic thin film to meet the physical specifications since *IEEE Transactions on*

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Magnetics teach that the film composition is the main influence on the film properties and that the composition can be altered depending on the desired end product (p.4499, Col. 2).

Furthermore, it would have been obvious to one having ordinary skill in the art at the time applicants invention was made to alter the composition of the magnetic thin film since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). *IEEE Transactions on Mechanics* teaches the thin film magnetic layer for the purpose of providing a ferrite core with high efficiency and saturation magnetization (p.4459, Col. 1). It would have been obvious through routine experimentation to have modified a high current suppression body with a Fe-Si-N or Fe-Al-O ferrite magnetic thin film for the purpose of providing a ferrite core with high efficiency and saturation magnetization as taught by *IEEE Transactions on Mechanics*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicants invention was made to have modified WO '792 by using a Fe-Al-O ferrite compound in the magnetic thin film as taught by *IEEE Transactions on Mechanics* in order to provide a ferrite core with high efficiency and saturation magnetization.

15. Claims 5-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO '792 in view of Yoshida et al. (US 2001/0026016).

WO '792 teaches a high current suppression body as detailed above. WO '792 teaches that the magnetic composition may be a ferrite (Translation p. 2, paragraph [0016]) but fails to teach the composition of the ferrite.

Yoshida et al., however, teach an electronic component of a high frequency current suppression body comprising a magnetic thin film (see Abstract). Yoshida et al. teach that the

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magnetic thin film has an M-X-Y composition wherein M is one of Fe, Co, and Ni, Y is one of F, N, and O, and X is one of C, B, Si, Al, Mg, Ti, Zn, Hf, Sr, Nb, Ta, and rare earth elements (p.2, paragraphs [0021] and [0025]). The maximum value μ exists within a frequency range of 100MHz to 10GHz wherein the relative bandwidth is not greater than 200% and not smaller than 150% (p.2, paragraphs [0021] and [0023]). The magnetic loss material has a thickness within a range of 0.3 to 20 μm (p.2, paragraph [0020]). The size of saturation magnetization of the magnetic loss material is in a range of 35-80% of saturation magnetization of metal magnetic body consisting solely of M component (p.2, paragraphs [0022] and [0024]). The magnetic loss material exhibits a DC electric resistivity in a range of 100 to 700 $\mu\Omega\text{-cm}$ (p.2, paragraph [0022]). The M component exists in a granular form ranging in size from 1nm to 40 nm (pgs. 2-3, paragraph [0025]). The magnetic loss material exhibits an anisotropic magnetic field H_k of 600Oe or less (p.3, paragraph [0026]). Yoshida et al. teach the magnetic thin film for the purpose of providing an electronic component which can completely suppress a high frequency current to prevent an electromagnetic interference even when it is used at a high frequency (see Abstract). It would have been obvious through routine experimentation to one of ordinary skill in the art at the time applicants invention was made to have used a ferrite magnetic thin film with the aforementioned M-X-Y composition for the purpose of providing an electronic component which can completely suppress a high frequency current to prevent an electromagnetic interference even when it is used at a high frequency as taught by Yoshida et al.

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicants invention was made to have modified WO '792 to include a ferrite magnetic thin film with an M-X-Y composition as taught by Yoshida et al. in order to provide an electronic

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component which can completely suppress a high frequency current to prevent an electromagnetic interference even when it is used at a high frequency.

16. Claims 5 and 7-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO '792 in view of Ikeda et al. (US 2002/0129875).

WO '792 teaches a high current suppression body as detailed above. WO '792 teaches that the magnetic composition may be a ferrite (Translation p. 2, paragraph [0016]) but fails to teach the composition of the ferrite.

Ikeda et al., however, teach a ferrite magnetic thin film comprising F, N, O, and one of Al, B, Ga, Si, Ge, Y, Ti, Zr, Hf, V, Nb, Ta, Cr, Mo, W, and Rh (p.1, paragraphs [0008-0012]). The magnetic thin film simultaneously has a high saturation magnetic flux density, a high permeability, and a high electric resistivity (p.1, paragraph [0014]). The permeability is preferably not less than 500 and the resistivity is not less than 30 $\mu\Omega$ -cm. The magnetic thin film comprises components in granular form that are not more than 15nm in size (p.2, paragraph [0017]). Although not given any patentable weight, the magnetic thin film is made via a sputtering technique (p.4, paragraph [0062]). The magnetic field operates in a range of 100MHz (p.7, paragraph [0107]). Although Ikeda et al. is silent towards several of the physical properties, i.e., the relative bandwidth, the saturation magnetization, and the anisotropic magnetic field H_k , these physical properties are inherently met given the material equivalence between the applicants invention and the teachings of Ikeda et al. It would have been obvious to one of ordinary skill in the art at the time applicants invention was made to alter the composition of the magnetic thin film in Ikeda et al. thereby influencing the physical properties of the film since Ikeda et al. specifically teach altering of the composition to effect certain properties (p.7,

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paragraph [109]). Furthermore, it would have been obvious to alter the composition of the magnetic thin film taught by Ikeda et al. since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Ikeda et al. teach the ferrite magnetic thin film for the purpose of providing a magnetic thin film having a high saturation magnetic flux density, a high permeability, and a high electric resistivity (see Abstract). It would have been obvious through routine experimentation to one of ordinary skill in the art at the time applicants invention was made to have used a ferrite compound of the aforementioned composition for the purpose of providing a magnetic thin film having a high saturation magnetic flux density, a high permeability, and a high electric resistivity as taught by Ikeda et al.

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicants invention was made to have modified WO '792 by using a ferrite composition for a magnetic thin film as taught by Ikeda et al. in order to provide a magnetic thin film having a high saturation magnetic flux density, a high permeability, and a high electric resistivity.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian P. Egan whose telephone number is 703-305-3144. The examiner can normally be reached on M-F, 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Y. Pyon can be reached on 703-308-4251. The fax phone numbers for the

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organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

BPE
October 18, 2002


HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772

10/19/02